fernald Report

Inside

- Cleanup Progress Update
- Railroad Training
- "Living History" Project

May 1998

message from
Jack Craig

Water Treatment Successes

After a record-setting 10-inches of rainfall in April, one of the last things you are probably interested in is water. But two projects that we've completed in the past month are a testament to the kind of work we can do here at Fernald. The first project is the Advanced Wastewater Treatment Plant (AWWT) expansion. This facility is the last stop for our storm water, wastewater and groundwater before it is pumped to the Great Miami River. The original treatment capacity for the facility was 1,100 gallons-per-minute (gpm). The expansion subcontract, which was awarded to Fred DeBra and Co. in 1997, raises our water treatment capacity to 2,900 gpm. Typically such an expansion would involve the construction of new buildings or support structures. In this case a former production building, which had been previously retrofitted, was designed with room to grow. From a water treatment standpoint, we will soon begin aggressively treating greater volumes of contaminated water in the aquifer beneath the Fernald site. Combined with the technology of reinjecting water back into the aquifer, we expect to trim approximately 10 years or more off of the original 25-year aquifer remediation schedule.

Several years ago a portable effluent treatment system was purchased to support the biodenitrification facility. Once the need for that service went away the equipment sat unused until the team responsible for sitewide utilities suggested reusing the system as a sewage treatment plant. The bulk of the structure was moved by truck across the site to the AWWT complex. By reconfiguring the system and reusing parts found around the site, a new facility was built using 90 percent of the original equipment. A concrete pad, some pumps and hardware were then needed to get the system operational.

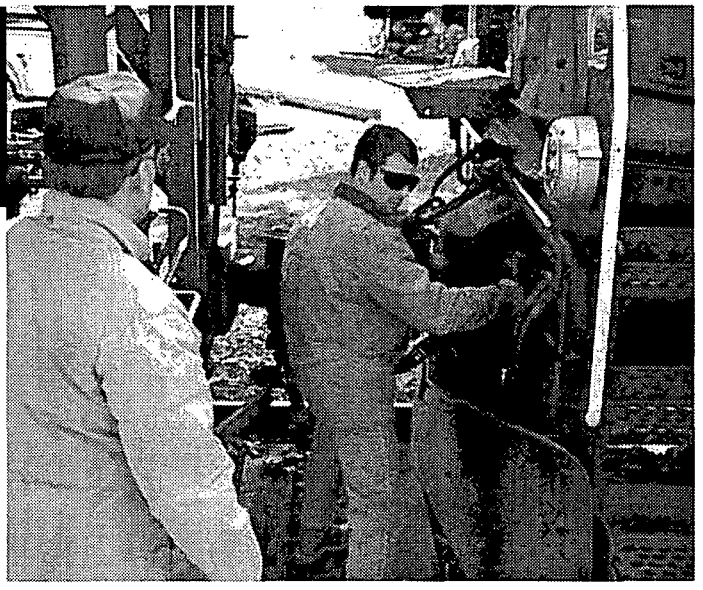
This is a real Fernald success story. As we are working in an environment driven by deadlines and the need to get more value from our budget dollar, we have clearly challenged our workforce to take responsibility, to find better techniques, to reuse and recycle whenever possible and to try options that might otherwise go untested. At a recent Cleanup Progress Briefing stakeholders were enthusiastic when we shared this story and they wanted to make sure this accomplishment was recognized. I congratulate the AWWT Expansion and Sewage Treatment Plant teams for jobs well done. Since our ultimate objective is the safe remediation of the Fernald site, clean water will continue to be a benchmark and one of our highest priorities.

Jack Craig
Director, DOE-Fernald

2

On the Cover: *A spring morning means an early start for team members working on rail line upgrades for the Waste Pits Remedial Action Project. (6349D-1363).*

WPRAP team prepares for future rail shipments



Left: The training course balanced classroom activities with hands-on field demonstrations of all phases of rail operations. Steve Capano drains condensation from a line before hooking up the air hose on the locomotive (6851-54).

Eleven Fernald employees supporting the Waste Pits Remedial Action Project (WPRAP) participated in a training course on rail operations and maintenance at the Academy of Industrial Training's (AIT) Philadelphia training center.

"We chose AIT because of its extensive training experience with the rail industry," said Willy Benson, WPRAP operations planning manager. "Most of our time was spent in the field, learning to operate and move locomotives and railcars safely. The training gave us the background knowledge we need to develop our operating procedures."

As part of Operable Unit 1's final cleanup plan, Fluor Daniel Fernald is responsible for rail shipment of excavated wastes from Fernald's six waste pits, clearwell, and burn pit to an off-site disposal facility. Over the last year, WPRAP has completed several projects in preparation for future rail operations, including: improving Shandon Yard, the switch yard that joins Fernald's rail line to the CSX branch line; upgrading several local trestles along the transportation route; and constructing an on-site rail yard and a locomotive maintenance building.

This summer, WPRAP will field test the rail operations procedures using two, 60-ton locomotives, scheduled to arrive at Fernald this June. Once approved, AIT will use the procedures to conduct a second phase of training for Fernald Atomic Trades and Labor Council members and project personnel who will be involved in rail inspection, operations or maintenance. The training is scheduled to be held at Fernald this fall.

Above: In April, the CRO received a $50,000 grant from the Ohio Department of Development to establish an entrepreneurial assistance program to stimulate growth of firms which may hire Fernald workers (6529-2).

DOE awards planning grant to Fernald CRO

The DOE Office of Worker and Community Transition awarded a $262,000 grant to the Fernald Community Reuse Organization (CRO) to develop a plan to help workers and local communities adjust to job losses resulting from eventual closure of the Fernald site.

"I look forward to continuing our partnership with DOE and Fluor Daniel Fernald as we seek creative ways to promote local community development and worker transition opportunities," said CRO Chair David McWilliams. "Our primary goal is to help Fernald workers prepare for the future as Fernald completes various phases of the cleanup."

One of the first activities the CRO will pursue is to inventory Fernald's resources, including its work force, land and materials, and assess their economic potential. "Once we complete this initial research, we can develop plans to transition the resources for productive use by the community," commented McWilliams.

Cleanup **Progress** Update

Waste Pits Remedial Action Project (WPRAP)

- Continued construction of on-site rail infrastructure and Shandon Yard upgrade
- Awarded contract for procurement of 50 gondola railcars
- Submitted *Draft Transportation and Disposal Plan* to regulatory agencies
- Continued review/finalization of IT Corporation's pre-mobilization contract deliverables

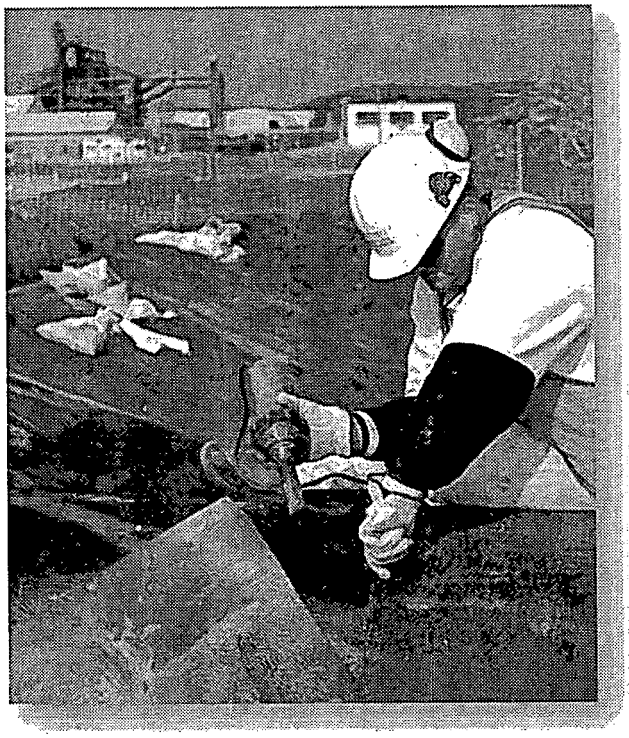
On-Site Disposal Facility (OSDF)

- Completed placement of a 2-foot layer of select impacted material in Cell 1 using material from the East Soil Stockpile
- Continued construction of Decontamination Facility
- Awarded OSDF Phase II/Southern Waste Units excavation contract awarded to Petro Environmental
- Began construction of OSDF access control and laboratory trailers
- Continued work on Leachate Conveyance System punchlist items

Above: A rail joint bolt tightener is used to secure new track recently placed in the North Rail Yard (6349D-1356).

Right: A Petro employee prepares a seam in the liner at the equipment wash facility near the entrance to the OSDF (6319D-1181).

Far right: Waste Acceptance Operations personnel Rob Turnbull and Linda Barlow watch carefully as impacted soil from the East Stock Pile is loaded and sent to the OSDF (6319D-1204).



4

Facilities Closure & Demolition Project (FC&DP)

Safe Shutdown

- Plant 2/3 —
  - Completed holdup material removal from selected areas
  - Continued asbestos removal
- Plant 6 —
  - Completed control point setup
  - Continued utility disconnects and biohazard removal
  - Continued packaging and movement of drums to Plant 1 Pad
- Non-Nuclear Facilities —
  - Completed excavations on underground utility lines to Boiler Plant
  - Completed excavation of Cooling Water Line to old Cooling Tower
  - Completed utility isolations and tie-ins to steam and chlorine lines

Decontamination & Dismantlement

- Boiler Plant/Water Plant —
  - Completed demolition of East and West Precipitator breeching and support steel
  - Completed demolition of Boiler Plant South Bay structural steel and removed equipment
  - Began asbestos abatement and transite removal at old Cooling Tower
- Thorium/Plant 9 Complex —
  Plant 9 and Building 69
  - Completed removal of asbestos-containing material
  - Continued interior dismantlement along with equipment, concrete and interior transite removal
- Recycling Supplemental Environmental Projects
  - Completed railroad track removal for Plant 9 complex

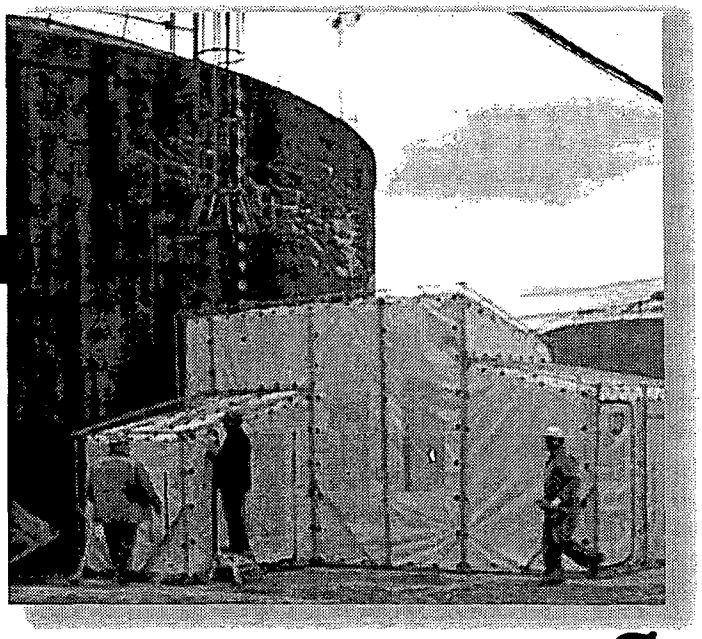
Silos Project

- Initiated evaluation of *Silos 1 and 2 Proof of Principal Testing Request For Proposal*
- Continued preparing for Standard Startup Review of Silo 3 Small Scale Waste Retrieval
- Submitted *Silo 3 Draft Remedial Design Work Plan* to DOE for review

Left: Demolition crews use a cable and shears to pull down the Flue Gas Breeching on the north end of the Boiler Plant. (6407D-561).

Below left: Equipment decontamination within Plant 9 is just one of the many tasks Fernald team members perform safely (6494D-0236)

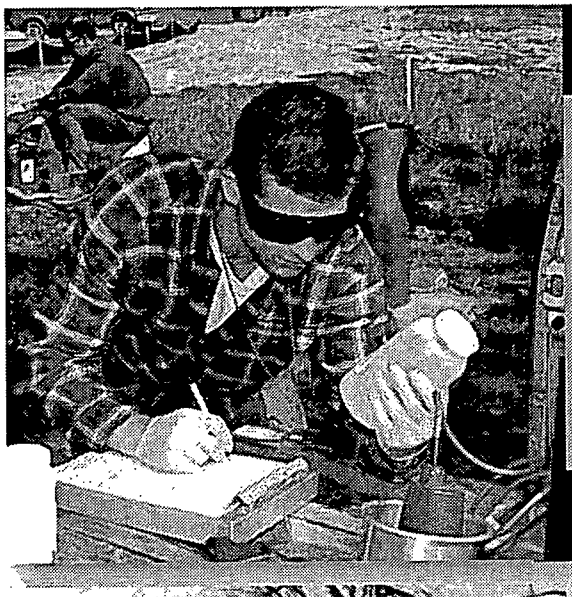
Below: The Silo 3 enclosure consists of three-ply vinyl fabric and an air filtration system which serves as a controlled environment as Hazwats in bubblesuits draw samples (6759D-0176).



Cleanup **Progress** Update

Right: Chris Engel takes a sample from one of the 600 monitoring wells located in and around the site (6860D-013).

Center: Darren Wessel, member of the Real-Time Characterization Monitoring Team, performs surface soil monitoring for radionuclides (6846D-029).

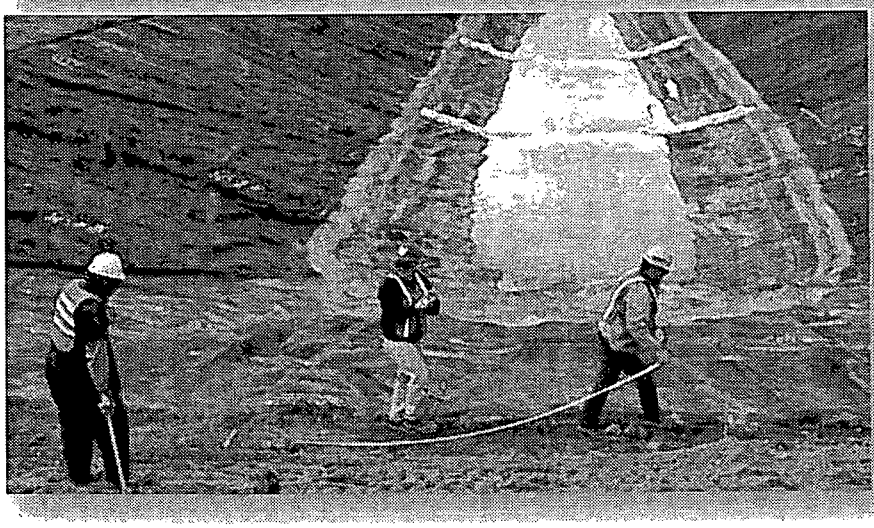


Aquifer Restoration & Wastewater Project

- Successfully completed the expansion of the Advanced Wastewater Treatment Facility and initiated operations
- Submitted *Draft-Final Startup Monitoring Plan* for South Field Extraction System and South Plume Optimization Groundwater Restoration modules to regulatory agencies
- Completed new sewage treatment plant

Soil Characterization & Excavation Project

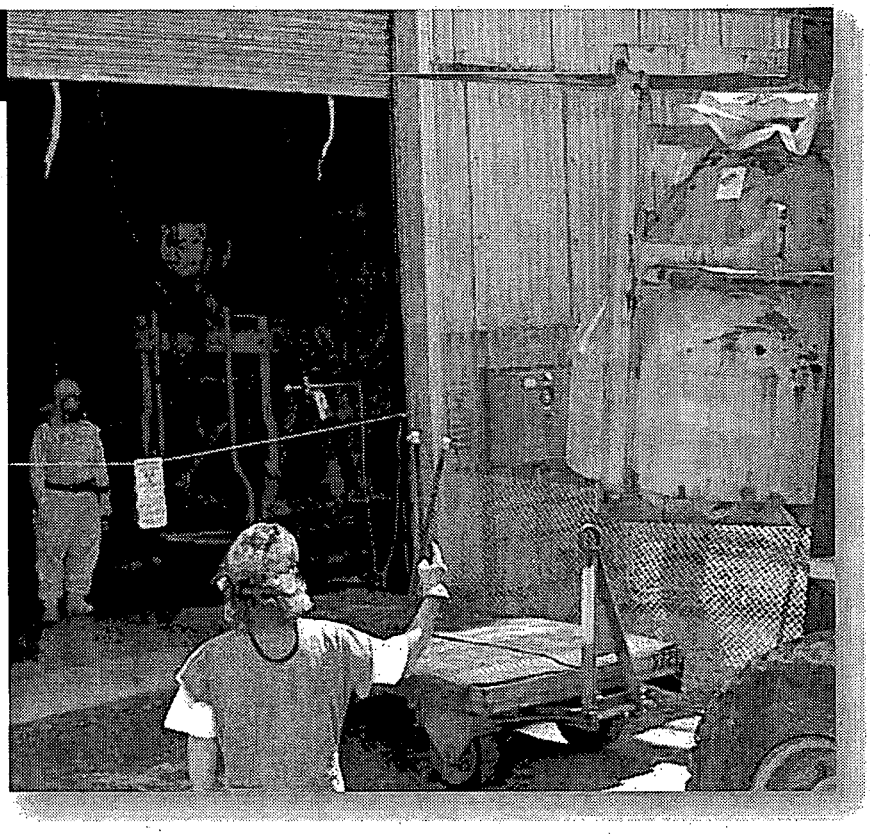
- Completed field implementation of Area 2 Phase I (Southern Waste Units) Site Preparation package, including construction activities, hydrostatic testing of piping systems, and installation of fencing and gates
- Completed the following sampling activities:
  - Above-Waste Acceptance Criteria (WAC)/Firing Range sampling in Area 2 Phase I
  - Additional WAC sampling of West Soil Stockpile in Area 1 Phase I (OSDF Cell 1 Footprint & Nearby Areas)
- Initiated Phase I wetland mitigation design
- Submitted *Draft Final Sitewide Excavation Plan* to regulators
- Held meeting with Natural Resource Trustees (DOE, Ohio EPA, Department of Interior and U.S. Fish and Wildlife Service) in April. As a result, trustees proposed possible settlement of State of Ohio lawsuit against DOE for natural resource damages



Left: Workers measure and stake the perimeter of Retention Basin 2 for the installation of a chain link deer fence (6734D-433).

Waste Management Project

- Thorium Legacy Waste Stabilization Project— Issued *Standard Startup Review Implementation Plan*
- Organic Treatment Project — Evaluated responses to *Commerce Business Daily* announcement; prepared Request for Proposal and began internal review process
- Completed DOE Operational Readiness Review (ORR) for activities involving enriched restricted materials, with preliminary results indicating four pre-start findings. Satisfactory completion of pre-starts and DOE-Fernald concurrence is required before the DOE-Ohio Field Office will grant approval to restart operations
- T-Hopper Repackaging System— Started two-shift operations in mid-April: repackaged 22 T-Hoppers as of April 30, 1998



Above: A heavy equipment operator gives direction as a T-Hopper is placed on a dolly prior to entering the repackaging station (6714D-08).

Left: Radiological control technician Barb Hamilton conducts initial monitoring on steel rail for potential recycling. If monitoring results exceed detectable limits the metal is grit blasted and remonitored (6868D-015).

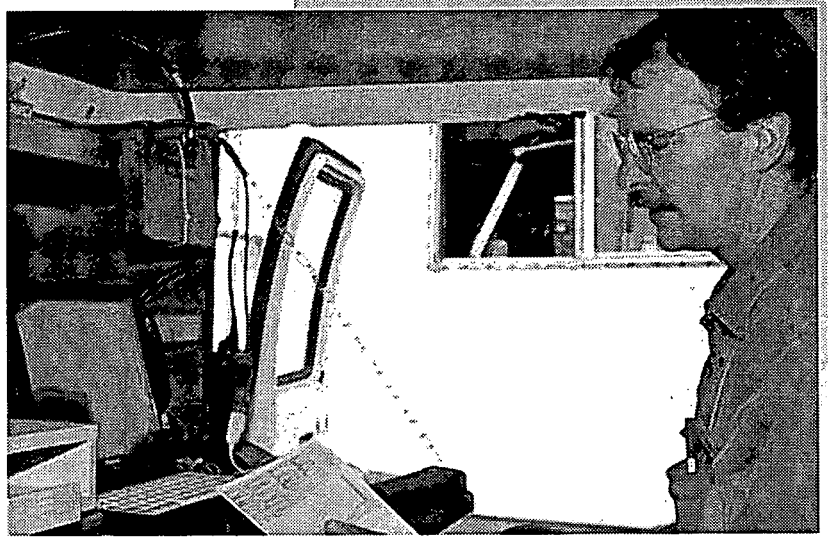
The RTRAK gets upgraded

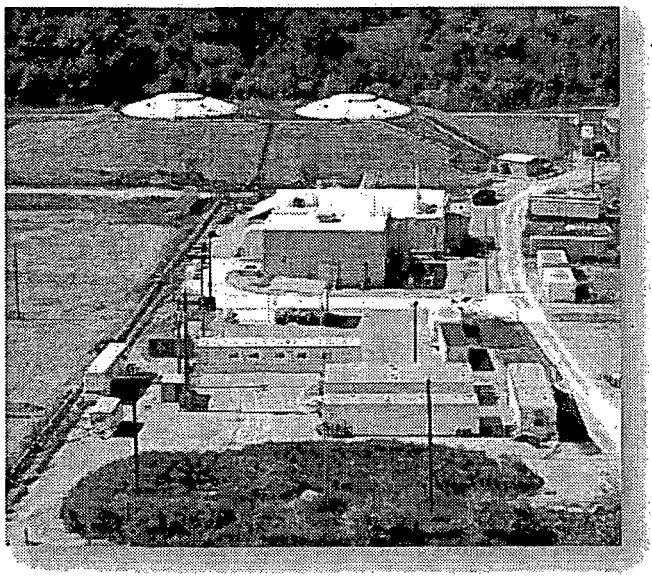
The Department of Energy Office of Science and Technology Accelerated Site Technology Deployment (ASTD) Program awarded Fernald $1,325,000 for the development of innovative technologies.

A real-time technology for which ASTD funding is being used is the mobile radiation tracking system (RTRAK). The RTRAK is a tractor fitted with gamma radiation detectors and is being upgraded with a Global Positioning System, on-board computers for color-coded contamination map generation, and a wireless data transmission system. These additions along with integrated software systems capable of automated data reduction and quality control checking, will significantly enhance its real-time analytical capabilities.

As a result of this innovative technology deployment, the ASTD program expects to save time and money since the RTRAK provides 100% coverage and is quicker than traditional soil sampling. This will mean more accurate results in determining if soil and material meets the on-site disposal Waste Acceptance Criteria.

Below: Dale Seiller a radiological engineer in the Soils Characterization Excavation Project demonstrates the quality control data transfer van which serves as a crossroad between field data results and posting on the network (6876D-035).





Above: After Proof-of-Principle testing and the Record of Decision Amendment are complete, a qualified vendor will be selected to perform the full-scale remediation of Silos 1 and 2 at Fernald. (6718-35)

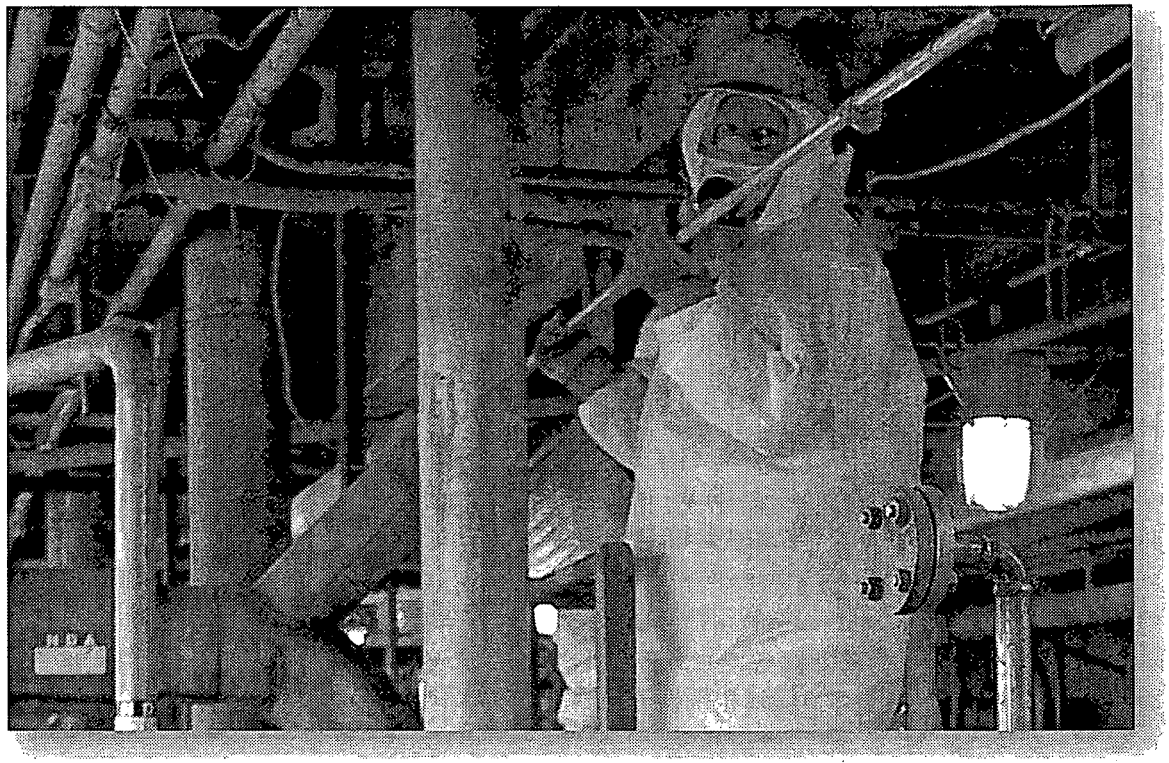
DOE evaluates proposals for treatment options of Silos 1 & 2

DOE is in the process of evaluating several proposals submitted from vendors interested in helping remediate Silos 1 and 2 — the K-65 Silos — at Fernald. DOE issued a Request for Proposal in February 1998 requesting interested contractors to submit proposals for testing technologies within the following families:

- *Vitrification - Joule-heated*
- *Vitrification - non-Joule-heated*
- *Chemical Stabilization - Cement based*
- *Chemical Stabilization - non-Cement based*

Based on a agreement with regulators and stakeholders the original *Silos Project Record of Decision*, which was approved by EPA in 1994, will be amended. As part of the process, DOE is reevaluating the best technology to use when remediating Silos 1 and 2. The next step of the amendment process entails testing and proving the technology families listed above — a process known as Proof-of-Principle Testing. Results of this testing will be included in a revised Feasibility Study document, which is expected to be complete by February 2000. In the interim, DOE has agreed with EPA to award the contract for the Proof-of-Principle testing by August 10, 1998.

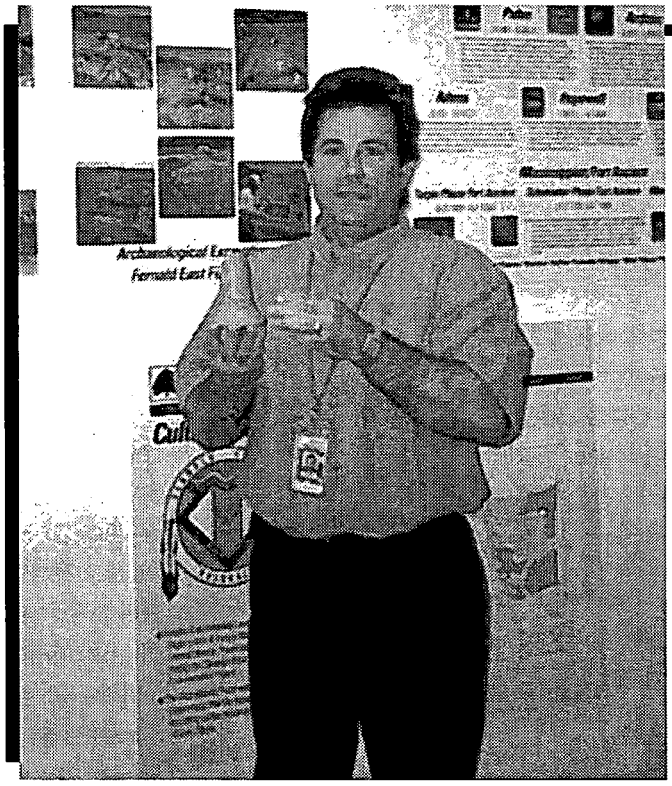
Employees log 2 million safe work hours



Earlier this month, Fluor Daniel Fernald employees achieved 2 million hours without a lost-time accident, continuing the safe work record they started last November. "We're very pleased with this accomplishment," Jack Craig, DOE-Fernald director, said. "It's important to have this obvious commitment to safety as we move into the heart of the construction season."

Fluor Daniel Fernald's goal for 1998 is to reach 3.9 million safe work hours. "Tracking the number of hours we've accumulated is a good way to measure our progress, but the real achievement is that our employees are thinking and working safely," said John Bradburne, Fluor Daniel Fernald president. "I am very proud of the progress our team is making cleaning up this site."

Above: Safe Shutdown crews in Plant 2/3 remove material that is often caked and difficult to break loose from old process lines (6383D-417).



Cultural Resources goes on the road

Fluor Daniel Fernald Cultural Resources Manager, Joe Schomaker was recently asked to give a talk to the Ohio Environmental Protection Agency (OEPA) in Dayton, Ohio. Approximately 35 people attending the presentation learned about the historic sites around the Fernald facility, the Native American history and cultures in the Ohio valley and the curation that took place last spring.

Laura Hafer, Public Involvement Coordinator, had seen Joe's presentation at a Fernald meeting and was so impressed she invited him to speak in Dayton. "The presentation was excellent," said Hafer. "Fernald is very lucky to have someone with Joe's background and experience in such a specialized and sensitive field."

Left: Joe Schomaker talks about one of many artifacts discovered during the Fernald clean-up (6884-1).

Where did the school year go?

It's not just the teachers who reflect on the school year gone by, so do all of the employees involved in Education Outreach Programs at Fernald. Since the beginning of this school year, Fernald-sponsored programs like the Regional Science Bowl and the American Enterprise Speech Contest have reached more than 10,000 educators and students. National Engineers Week and Junior Achievement offered Fernald engineers and other professionals a chance to get out into the classroom. Teachers enhanced their skills by attending workshops like *Archaeology: Can You Dig It?* and *Investigating Groundwater: The Fruitvale Story.*

The Successful Teaming for Education Partnerships in Science (STEPS) Program is a new effort aimed at improving science and proficiency skills in the Ross and Southwest Local schools. Employees volunteered again this year to host Partnership In Education programs; judge area Science Fairs and represent Fernald at events such as Earth Day, Waterfest and Career Day. In addition to devoting time and expertise, hundreds of computers were delivered to classrooms through the Fernald Gift Program.

No wonder the school year flew by! As we take a short break over the summer, it will soon be time to gear up for even more exciting programs this fall.

Above: Fernald's Partnership in Education program gives students a chance to participate in a variety of hands-on experiments (6752-15).

Community volunteers spearhead project to record Fernald "Living" History

Above: A group of community volunteers and representatives from DOE, Fluor Daniel Fernald, Ohio EPA, the University of Cincinnati and Miami University meet monthly to discuss the Fernald Living History Project. (6864D-007)

A group of volunteers from the Fernald community, in partnership with the University of Cincinnati's Center for Environmental Communication Studies (CECS) and Miami University's Institute of Environmental Sciences, is leading an important historic preservation effort. This effort will record and preserve the environmental and societal impacts of nuclear weapons production and subsequent remediation activities at the Fernald site on the surrounding communities.

"It's part of our responsibility to preserve the community's oral history so that stories aren't lost with the people who pass away," noted project volunteer and Crosby Township Historical Society member James Innis.

Over the next several years, the Fernald Living History Project will conduct educational workshops and host sessions for community members and Fernald workers to share their personal testimony, journals and photographs. The volunteer advisory group is currently pursuing funding from various sources, including private foundations, government grants and corporate sponsors.

To learn more about the Fernald Living History Project, please contact CECS, 556-4001 or view their homepage: *(http://ucaswww.mcm.uc.edu/communication/cecs/cecs.htm)*

Recent Tours

Twenty-five students from the Chemistry/Technology Program at the College of Applied Science visited Fernald. The tour included stops at the Advanced Wastewater Treatment Facility and the analytical lab. Professor Maria Kreppel, who accompanied the class, was instrumental in organizing Fernald's Community Reuse Organization.

During their stop at the AWWT, Cathy Glassmeyer, a Fluor Daniel Fernald engineer, explained the water treatment process (6810D-031).

On April 14, the Environmental Chemistry class from Northern Kentucky University toured the site. Professor Roger Blanchard *(back row left)* brought several of his classes to the site for tours.

"Many students use Fernald for projects and papers because of the availability of tours and the resources easily found at the Public Environmental Information Center," said Professor Blanchard (6810-39).

Steve Wyatt, Director of Public Affairs at the DOE Oak Ridge Facility, has been associated with Fernald for several years. His visit was prompted by interest in Fernald's Envoy Program.

(from l to r) Mike Jacobs, DOE-Fernald Public Affairs; Wyatt; David Page, DOE-Oak Ridge Intergovernmental Affairs Specialist; and, William Capshaw, Sr. Public Relations Specialist for Bechtel Jacobs (D6810-036).

New documents added to the Public Environmental Information Center

The following information was recently added to the Public Reading Room, Administrative Record files and Post Record of Decision files at DOE's Public Environmental Information Center (PEIC):

- Waste Pits Remedial Action Project (WPRAP) Design Plan Package - 3 Volumes
- Environmental Protection Agency Discharge Monitoring Reports
- Amendment to Operable Unit 3 Integrated Remedial Design/Remedial Action Work Plan
- Technical Review Comments on Authorized Limits for Fernald Copper Ingots
- Work Plan for the Installation of the Fernald Environmental Management Project Aesthetic Barrier
- Maintenance/Tank Farm Complex Implementation Plan for Above-Grade Decontamination and Dismantlement Integrated Environmental Monitoring Status Report
- Silo 3 Final Explanation of Significant Differences document
- Site-Wide Excavation Plan
- Draft Transportation and Disposal Plan for Operable Unit 1
- Handouts from recent public meetings including the:
  - Feb. 25 Procurement 101 workshop sponsored by the Fernald Residents for Environmental Safety & Health and the Fernald Citizens Advisory Board to discuss government procurement practices
  - March 10 Cleanup Progress Briefing
  - April 1 Silos Project Public Involvement Workshop
  - April 14 Cleanup Progress Briefing

If you would like to receive additional information about the Fernald cleanup, please visit the PEIC; 10995 Hamilton-Cleves Highway (Delta Building) or call (513)648-7480.

Fernald Report
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12